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Office Hours: by appointment

T.A.: Emily Pichler
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Office Hours: Wednesday 2:00 - 3:00 PM, available by email, and additional meetings are available by appointment.

Lecture: Monday 12:50-3:50 (100 John Dewey Hall)
Lab: Friday 12:50-3:50 (128 John Dewey Hall)

Course Description:

This is the second part of a two-series course required of all graduate students in the psychology program. The class will provide a more detailed approach to advanced statistics. We will cover data analysis with an emphasis on understanding data and quantitative thinking, graphical data displays, building and testing theoretically-driven models, how distributions affect hypothesis testing, Multiple Regression, the General Linear Model, and some extensions of multiple regression are the primary emphasis. There is also coverage of a select number of additional topics. These statistical techniques are central to evaluating a variety of hypotheses in psychology and related fields.

Course Objectives:

After completing this course, you will be familiar with the basic theory and analyses underlying each of the topics noted in the course schedule. More specifically, you will be proficient in:

1. Organizing and describing data, including useful plotting and graphical data display.
2. Selecting data analytic approaches that best test for specific research questions.
3. Understanding the theoretical assumptions underlying specific analyses.
4. Organizing data and importing it into statistical programs.
5. Applying SPSS to perform the analyses covered in the course.

Meeting these objectives, however, does NOT mean that you will be an expert in all, or even any, of these statistical techniques. Expertise in statistics generally develops only after multiple,
repeated applications to real-world problems (i.e., repeated analyses with data that you care about such as the problems and data you will encounter in your theses and dissertations). The intent of this course is to provide you with a basic overview and introduction to some statistical techniques. You will most likely develop your own area of statistical expertise and training through subsequent coursework and especially through research projects.

Course Materials:

Required:

Recommended:

Optional book and additional resources:
- A number of helpful SPSS guides, including the Base and Advanced Statistics User Manuals are available for free online and in PDF format here: http://www-947.ibm.com/support/entry/portal/documentation/software/spss/spss_statistics
- Additional handouts and readings will be available by email or handed out in class.
- A flash drive is needed to save data sets and work throughout the semester.
- You will have access to lectures, slides, handouts, assignments, labs, and review materials via the course BlackBoard site.

Course Components:

General:
- Attendance is required at all class meetings. The information presented and discussed is integrative and cumulative. Missing any aspect, therefore, leads to increased difficulty in understanding later material. Students are expected to have read assigned material before it is discussed in class; class lecture and class discussion presume that students have read all assigned material.
- Work must be complete and handed in on time. No late work will be accepted.
- The only reasons you should miss class or lab are to attend a professional conference or for an emergency.

1) Lab Assignments (Applied)
- There will be weekly lab assignments for most topics covered. They are designed to help you understand and integrate materials by working to solve problems using real data sets. These assignments will be available prior to the day when we cover them in lab, so that you may work on them beforehand. The intent of the labs is not for you to only “get the right answer,” but to develop statistical skills using SPSS in order to apply the ideas discussed in lecture.
- All lab assignments are due on the next Tuesday by 5:00 p.m. following that lab. The assignments will be graded using a “pass/fail” system. A pass is equivalent to 1 point, a fail is no points. If you don’t turn in a homework assignment, or if you turn it in late and unexcused, you will receive no credit. You must make a genuine effort to complete the work. NO credit will be awarded for poor and sloppy work. The only exceptions to this policy are if
you are ill or have an emergency and are unable to get the assignment in on time. You must notify the instructor of illness or in advance if you must be away. For example, if you will be out of town at a conference or other professional activity, discuss it ahead of time with me and make arrangements to complete missed assignments. Although these are not graded beyond pass/fail, the degree to which you incorporate the feedback received on them will influence your performance on exams.

2) Exams (Theoretical and applied)
   • Both theoretical and applied material will be covered on the exams, with an emphasis on the former.
   • In general, the exams will involve analyzing data using SPSS, interpreting the output, and applying the results to theoretical principles covered in the course.
   • The exams are in take home format.
   • Late exams will not be accepted.

3) Participation (Essential)
   • All students are expected to participate in group discussions, ask questions to clarify material, and contribute to helping others in the class learn the material. If you do not ask questions, I will assume that you understand the material. It is your contributions to the class that will best help everyone meet their learning goals, so please adopt a helpful and team-oriented approach to the class as much as possible.

Course Evaluation:
Lab Assignments 20%
Exams 60% (2 equally weighted exams)
Participation 20% (including class and lab attendance).

Grading Scale:
100% A+ 77-79% C+
95-99% A 74-76% C
90-94% A- 70-73% C-
87-89% B+ 60-69% D
84-86% B   < 60% F
80-83% B-

Academic Integrity:
Students must be present and on time for all exams. There will be no make-up exams except for University excused absences (e.g., medical emergencies, see the Student Handbook for more details). You must bring documentation to support such an excused absence. There are no make up labs. If you miss a lab you will miss very valuable information. Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the UVM academic honesty policy for further information, including the consequences for acts of academic dishonesty. The policy is online at: http://www.uvm.edu/~dosa/handbook/?Page=Academic.html

Religious Holidays:
Please notify the instructor if you must miss class or an exam because of a religious holiday. I try to schedule exams around major religious holidays. If, however, I have failed to do so, notify me
in advance and a make-up exam will be arranged. Similarly, if you must miss class to observe a religious holiday, notify me in advance and arrangements can be made to get lecture notes.

Disability Accommodations:
Students requiring special assistance due to a disability are asked to contact the instructor during the first week of classes so that reasonable accommodation for the disability can be determined and arranged. Disability documentation, testing, and accommodations are coordinated through the ACCESS office on campus: [http://www.uvm.edu/~access/](http://www.uvm.edu/~access/).
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<tr>
<th>Date</th>
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| 1/12  | Review of Correlation and Simple Regression  
Introduction to Multiple Regression |  |
| 1/16  | Simple and multiple regression Lab |  |
| 1/19  | No Class – Martin Luther King Holiday |  |
| 1/23  | Lab Cleaning and Screening Data |  |
| 1/26  | Multiple Regression, more detail |  |
| 1/30  | Simultaneous and hierarchical regression Lab |  |
| 2/2   | Multiple Regression, categorical variables, the GLM, ANCOVA |  |
| 2/6   | Regression and GLM Lab |  |
| 2/9   | Moderation I  
Categorical by continuous variable interactions, simple slopes, testing and probing simple slopes |  |
| 2/13  | Interaction/moderation Lab I |  |
| 2/16  | President’s Day Holiday – No Class |  |
| 2/20  | No Lab |  |
| 2/23  | Moderation II  
Interactions with two continuous variables |  |
| 2/27  | Interaction/moderation Lab II |  |
| 3/2   | Spring Break – No Class |  |
| 3/6   | Spring Break – No Lab |  |
| 3/9   | Mediation I – Overview and simple mediation models - Midterm handed out |  |
| 3/13  | Mediation Lab I |  |
| 3/16  | Mediation II – multiple mediators, inconsistent mediation, contrasts |  |
3/20  Mediation Lab II
3/23  Regression diagnostics
3/27  Regression diagnostics Lab
3/30  Path analysis
4/ 3  Path analysis Lab I
4/ 6  Path analysis
4/10  Path analysis Lab II
4/13  Missing Data
4/17  Missing data lab
4/20  Logistic Regression
4/24  Logistic Regression Lab
4/27  Review and Final Exam handed out